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Douglas Creek

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE

ENVIRONMENTAL ASSESSMENT NO. OR090-98-24
Douglas Creek Timber Sale

# I. INTRODUCTION

The project area is located in Section 3, Township 20 South, Range 5 West, Willamette Meridian, Lane County, Oregon in the Siuslaw Watershed. The project area is in the Matrix Land Use Allocation and has management objectives for Connectivity and Riparian Reserves.

## A. PURPOSE AND NEED FOR THE ACTION

The purpose of the action within Connectivity is to provide a sustainable supply of forest products while promoting late-successional characteristics on the west side of the stand and improving stand vigor to promote stand volume growth on the east side of the stand. Specific objectives are to increase diameter growth on the project area, and encourage canopy layering and shade tolerant conifers on the west side of the project, The need for the action is established in the "Eugene District Record of Decision and Resource Management Plan", June 1995 (RMP), which directs that timber be harvested from Matrix lands in a sustained yield manner.

The purpose of the action within the Riparian Reserves is to hasten the development of late-successional forest structural characteristics. The need for the action is demonstrated by the uniform, heavy stocking of Douglas-fir, which is causing suppression mortality, reduced tree growth rates, and slowed development of canopy layering. The need for the action is established in the RMP, which directs that silvicultural practices be applied in Riparian Reserves to acquire desired vegetative and structural characteristics needed to attain Aquatic Conservation Strategy objectives. Specific objectives are to increase diameter growth on the project area, promote canopy layering and shade tolerant conifers on the west side of the project, increase the amount of coarse woody debris and snags, and rehabilitate stream crossings and improve stream structure.

## B. CONFORMANCE WITH LAND USE PLAN

The Proposed Action and alternatives are in conformance with the RMP. The RMP makes land use allocations and allows for density management thinnings in the Connectivity land use allocation and silvicultural practices within Riparian Reserves.

A watershed analysis for the Siuslaw Watershed has been completed (February, 1996)

On November 4, 1996, "Interim Guidance for Survey and Manage Component 2 Species: Red Tree Vole" was issued to implement component 2 of the Survey and Manage Standard and Guideline under the Northwest Forest Plan Record of Decision (BLM Instruction Memorandum

No. OR-97-009). This memorandum contained both the management recommendations (interim guidance) and the survey protocol for the red tree vole. Instruction Memorandum No. OR-98-105 extended the interim guidance through FY99 or until superseded by revised direction. The Proposed Action and alternatives are in conformance with this guidance.

Plan maintenance documentation postponing surveys for 32 Component 2 and Protection Buffer species was recently completed ("Plan Maintenance Documentation, USDI Bureau of Land Management, To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species," approved March 3, 1999). The Proposed Action and alternatives are in conformance with the direction provided in the Plan Maintenance Documentation. The implementation of the plan maintenance is provided for by BLM planning regulations (43 CFR 1610.5-4).

The effect of the plan maintenance action was analyzed in an environmental assessment, "To Change the Implementation Schedule for Survey and Manage and Protection Buffer Species," issued October 7, 1998 ("Schedule Change EA"). The analysis contained in the Schedule Change EA is incorporated into this document by reference.

Additional site-specific information is available in the Douglas Creek Timber Sale project analysis file. This file and the above referenced documents are available for review at the Eugene District Office. The Schedule Change EA and the Plan Maintenance Documentation are also available for review on the internet at http://www.or.blm.gov/nwfp.htm.

# II. PROPOSED ACTION AND ALTERNATIVES

The Proposed Action and Alternatives consider forest management activities including density management by commercial timber harvest; felling trees to create coarse woody debris; snag creation; stream crossing rehabilitation; improved stream structure, and road construction, renovation and decommissioning in an approximately 300-acre project area.

## A. PROPOSED ACTION - Density Management

This density management alternative with two thinning prescriptions proposes to thin from below the Connectivity lands and adjacent Riparian Reserves. The stand located east of Douglas Creek would be moderately thinned where the amount of ground vegetation present would not facilitate establishment of an understory of shade tolerant conifers. In the stand located west of Douglas Creek, heavy thinning would be completed where areas of little ground vegetation are present. Approximately 2.3 million board feet (MMBF) (4,257 hundred cubic feet (CCF)) of timber from an approximately 134-acre harvest area would be offered for sale.

### Silviculture

All trees not specifically identified for retention would be cut. Areas to be harvested would be thinned from below, reserving the largest and most vigorous trees, except where some larger trees would be harvested as needed to achieve the stocking objectives. Retention would favor conifers other than Douglas-fir, while harvested trees would be primarily Douglas-fir. Riparian Reserves would be treated to within 100 feet of non-fishbearing streams and the natural pond associated with Hydrology Feature 24 (see map) by thinning to the same densities as the adjacent uplands.

- In the Moderately thinned area east of Douglas Creek (approximately 54 acres), approximately 100 trees per acre (TPA) would be retained.
- In the Heavily thinned area west of Douglas Creek (approximately 87 acres), approximately 50 TPA would be retained. Up to one-half of this area would be planted with shade-tolerant

conifers (western red cedar) at a density of 100 TPA. Seedlings would be protected from animal browse with tubing.

No site preparation would be needed in the density management area. Any landing piles along natural-surfaced spurs would be left untreated for wildlife habitat.

### Retention

C Coarse woody debris (CWD) of decay classes 3, 4 and 5 would be retained where possible.

C Hardwoods and snags which are not a safety hazard to woods workers would be retained. Those felled for safety reasons would be retained on site.

C Nests/nest trees found in the project area would be protected by retaining the nest/nest trees where possible.

### Reserves

C The height of one site-potential tree in the Siuslaw Watershed has been determined to be 200 feet slope distance. Riparian Reserves (widths of 200 feet on either side of non-fish bearing streams, 400 feet on either side of the stream of fishbearing streams and the natural pond associated with Hydrology Feature 24) would be managed in accordance with the standards and guidelines in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (NSO ROD) (Appendix C, pp. 31-38). Management treatments within the Riparian Reserves would include thinning, road construction, road decommissioning, CWD creation, stream crossing rehabilitation and enhancement, and snag creation. No harvest would occur within 100 feet of non-fishbearing streams in treated Riparian Reserves or the natural pond. Trees for stream enhancement would be felled between 25 and 100 feet of the streams.

C Each wetland and spring would be reserved to its extent in accordance with the NSO ROD (Appendix C, pp. 31-38).

C One mollusk site located within 50 feet of a proposed landing at the end of Spur J would receive an approximately 26 foot diameter reserve. A clump of trees around the site center would be retained; yarding would be allowed through this reserve if necessary. Eleven other mollusk sites would be incorporated into the Riparian Reserves.

C One *Sarcosoma mexicana* site would receive an approximately 120 foot diameter reserve. One other site would be incorporated into the untreated Riparian Reserves. Two *Ulota megalospora* sites would be incorporated into the untreated Riparian Reserve for Douglas Creek.

### Roads

C Approximately 2,080 feet of road would be constructed on privately-owned land, and 8,153 feet of road would be constructed on land managed by BLM. Approximately 3,970 feet of existing road (Road No. 20-5-9) on privately-owned land would be renovated, and approximately 677 feet of an existing BLM-managed road (Spur F) would be renovated. New roads would be natural surfaced, built to minimum width standards (14 foot subgrade), with no ditches, reduced clearing limits, and outsloped where possible.

C Approximately 500 feet of existing Road No. 20-5-9 are located on the edge of the Riparian Reserve for a wetland located on private land and adjacent Stream 7, and approximately 200 feet of the road crosses the edge of the wetland. Approximately 180 feet of Spur A on BLM managed land would cross the edge of the Riparian Reserve for this wetland (see map).

C All roads would be waterbarred and blocked between logging seasons,

C Upon completion of harvest operations, all newly constructed roads and the renovated

portion of Spur F would be blocked and subsoiled (i.e., mechanically breaking up the compacted area of the road), and Road No. 20-5-9 would be waterbarred and blocked.

C No yarding or log hauling would be conducted on the natural surfaced spurs or roads during periods of wet weather.

### Yarding

C Falling and yarding would not be permitted during the sap flow period to avoid damage to the residual stand. Directional falling away from the untreated Reserve Areas would be required.

C No whole tree logging with limbs would be allowed; limbs would be cut and left in the unit.

C Yarding would be by cable and tractor. The Purchaser would have the option of using ground-based equipment on slopes less than 35%. Best Management Practices (BMP's) for cable and tractor yarding would be followed (ROD/RMP Appendix C).

C Yarding and falling would not be permitted in the untreated Reserve Areas, except as required through the mollusk reserve near the Spur J landing.

### Coarse Woody Debris Creation within the Treated Riparian Reserves

In the treated portions of the Riparian Reserves, approximately 10 TPA with diameters 10 inches or greater would be felled and retained for CWD.

### Rehabilitation of Existing Stream Crossings

An excavator would be used to remove log culverts and fill material at four stream crossings on existing, abandoned Road No. 20-5-21.1 in the project area. These crossings affect westside tributaries of Douglas (2, 5, 7 and 13). The work would be accomplished via a contract separate from any timber sale contract.

### Stream Channel Enhancement

To provide in-stream structure to Douglas Creek and its adjoining tributaries, which are currently deficient in large wood, approximately 80-90 trees from the Riparian Reserve would be felled and bucked into Douglas Creek, and approximately 10-15 trees per channel would be felled and bucked into each westside tributary. Trees felled would be between 25 and 100 feet of the streams. The work would be accomplished via a contract separate from any timber sale contract.

### Snag Creation

Approximately 3-5 snags per acre across diameter classes would be created after the density management treatment in the westside Riparian Reserves and in the westside project area. The work would be accomplished via a contract separate from any timber sale contract.

## B. ALTERNATIVE A - Density Management

This alternative would be similar to the Proposed Action, except an extension of Spur F (Spur F1) would be renovated and constructed to access approximately 7 acres in the southeast portion of the project area (see Alternative A map). Approximately 2.4 MMBF (4,484 CCF) of timber from an approximately 141-acre harvest area would be offered for sale.

### Roads

C Approximately 2,125 feet of existing Spur F1 would be renovated and approximately 800 feet of Spur F1 would be constructed. Design features for Spur F1 would be the same as for other roads as described in the Proposed Action.

C To avoid the introduction of scotch broom into the southeast portion of the project area, Spur

F would be constructed before renovating and constructing Spur F1. Road building equipment would be driven in with the blade up past the new construction (Spur F1) when entering the harvest area from the existing scotch broom infested portion of the adjacent clearcut to the east.

C Spur F1 would be waterbarred and blocked between logging seasons,

C Upon completion of harvest operations, Spur F1 would be subsoiled and blocked.

C All other road features would be the same as the Proposed Action.

**Yarding**

C Yarding of the additional 7 acres would be by a cable system.

All other design features, including Silviculture, Retention, Reserves, Coarse Woody Debris Creation, Rehabilitation of Stream Crossings, Stream Channel Enhancement, and Snag Creation would be the same as the Proposed Action.

### C. ALTERNATIVE B - Density Management

This is a density management alternative that includes only treatments associated with timber harvest. No management would occur within Riparian Reserves, including Coarse Woody Debris Creation, Rehabilitation of Stream Crossings, Stream Channel Enhancement, and Snag Creation. Approximately 1.8 MMBF (3,402 CCF) of timber from an approximately 107-acre harvest area would be offered for sale.

All design features related to density management outside the Riparian Reserves, including Silviculture, Retention, Reserves, Roads and Yarding would be the same as the Proposed Action.

### D. ALTERNATIVE C (no action)

All timber harvest activities would be deferred, and no management activities described under any alternatives would occur at this time. Because the project area is within the Matrix land use allocation, it may be considered for future timber harvests even if this alternative is selected at this time.

### E. ALTERNATIVES CONSIDERED BUT NOT ANALYZED

An alternative considered but not analyzed was to fully decommission Road No. 20-5-21.1, which goes through the middle of the proposed project area in a north-south direction, paralleling Douglas Creek. Work would include the features described in Rehabilitation of Existing Stream Crossings in the Proposed Action, and subsoiling. This alternative was not analyzed because the road is already overgrown with vegetation; utilizing subsoiling equipment would result in more resource impacts than if left alone.

A restoration alternative was suggested by the Oregon Natural Resources Council. This alternative was considered but not analyzed because it would not meet the purpose of the action. Additionally, the Proposed Action and Alternative A both contain restoration activities.

## III. ISSUES NOT ANALYZED

Impacts to Survey and Manage and Protection Buffer Species for which surveys are not technically feasible.

No site specific surveys were completed for any of the 32 Component 2 or Protection Buffer species listed in the Schedule Change EA. Individuals of *Sarcosoma mexicana* were found, incidental to

other surveys, and appropriate management actions to protect these sites would be implemented under all alternatives. However, it is possible that additional individuals may reside in the project area. The issue of how the Proposed Action and alternatives would impact potential locations of this species was not analyzed because impacts are not expected to exceed those anticipated in the Schedule Change EA.

Impacts to Cultural Resources

In response to initial consultation regarding a number of potential timber harvests within their ancestral area, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians raised a concern about "…the state of dwindling resources of a cultural nature left for native people to rely upon for their traditional ways of living." Follow-up conversations with their cultural coordinator revealed that they had no specific information regarding use areas within the proposed project area, nor did they have specific concerns regarding the Proposed Action. Therefore, this issue was not analyzed further.

# IV. AFFECTED ENVIRONMENT

The project area is in the Douglas Creek drainage of the Siuslaw Watershed. The Siuslaw Watershed Analysis analyzed the condition of the Riparian Reserves in the watershed and established guidelines under which they should be treated. (Siuslaw Watershed Analysis, chapter 5, pages 1-2.)

Most forest stands in the Siuslaw Watershed are currently in early or mid-seral stages, with approximately 39% of the watershed in a "mature" (80-199 years) or "old forest" (200+ years) condition. The project area is within a large area of pole-young stands (30-79 years). The area in the eastern portion of Section 3 was clearcut between the early 1970s to 1990, except for a stand of "mature" forest in the southeast quarter. Most of Section 5 to the west is "old forest" and is classified as Late-Successional Reserve (LSR) , which means it is to be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems. The Travis Tyrrell Seed Orchard lies to the south and southwest of the project area in Sections 9 and 15 and is classified as "non-forest".

Sections adjacent to the project area are privately owned.

The project area is within a Connectivity/Diversity Block of the Matrix land use allocation. The 25-30 percent of the Connectivity/Diversity block to be managed for late successional forest characteristics is located in Section 3: within the project area Riparian Reserves and within the stand of "mature" forest in the southeast quarter of the section.

The plants and animals in the project area do not differ significantly from those discussed in the "Eugene District Resource Management Plan\Environmental Impact Statement," November 1994 (Chapter 3). The following resources are also discussed in greater detail in the project file.

## Vegetation and Botany Resources

The project area is comprised of approximately 46-year old Douglas-fir which regenerated naturally following seed tree harvest in 1945. The stand is well stocked with a uniform overstory of Douglas-fir with a minor component of western hemlock. Western red cedar and western hemlock regeneration varies from sparse to moderate levels. Little legacy of the original stand remains other than scattered areas of large CWD. Portions of the stand have a scattered overstory of remnant seed trees. Black cottonwood and alder are found in the Riparian Reserves. Few understory conifers are present. Vine maple clumps are scattered throughout. Understory vegetation consists of vine maple, salal, swordfern and Oregon grape.

Very few snags of any diameter or age class are present in the project area. Coarse woody debris is generally sparse, although there are a few concentrations which are highly-decayed, large diameter,

and of short length.

Areas of laminated root rot, *Phellinus weirii*, are widely scattered throughout the project area.

The adjacent clearcut areas on the eastern boundary are infested with Scotch broom.

All botanical surveys have been completed. No threatened, endangered, or sensitive vascular plant species were detected. Surveys for *Ulota megalospora*, a Protection Buffer species of moss, were conducted during the fall of 1998 according to survey protocols established by the Eugene District Botany Work Group. Protocols were developed using information from Appendix J2 of the FSEIS and local expertise. Two trees hosting *Ulota* were found; both are located in the untreated Riparian Reserve for Douglas Creek.

Two sites of *Sarcosoma mexicana*, a Survey and Manage Component 3 and Protection Buffer fungus species were found incidental to other surveys. Northwest Forest Plan Standards and Guidelines for Protection Buffer species require surveys prior to ground-disturbing activities. However, consistent with the Plan Maintenance Documentation referenced earlier, site specific surveys for *Sarcosoma mexicana* were not conducted in the proposed harvest units.

A series of steep grassy meadows are located along the north east banks of Douglas Creek in the Riparian Reserves. Vegetation is somewhat diverse and mainly native with a few exotics. The meadows appear to be natural and could qualify as “dry meadows” as described in the RMP.

### Wildlife (including Special Status and Special Attention Species)

Section 3 is neither a Marbled Murrelet Reserve land allocation unit nor Designated Critical Habitat and is not suitable nesting habitat. No known nesting locations exist within the project area or within 0.25 miles. Suitable nesting habitat does exist within 0.25 mile, in the southeast quarter of Section 3, outside the project area. The project area was surveyed in 1997 and 1998; no murrelets were detected.

Section 3 is identified as Critical Habitat for northern spotted owls (Critical Habitat OR-CHU-53). According to the Upper Siuslaw Watershed Analysis, CHU OR-53 contains 50,593 acres of federal land, of which 21,385 acres (42%) are suitable (roosting, nesting, and foraging) habitat. The project area is defined as dispersal habitat with low quality roosting and foraging potential. Nesting potential is possible but unlikely. No known spotted owl sites exist within the 1.5 mile provincial radius. Surveys conducted from 1991-1995 detected a single status male owl once in Section 3. Surveys were conducted in 1998; no spotted owls were detected. Surveys will be conducted in harvest years as needed in order to comply with the terms and conditions of the Biological Opinion issued by the US Fish and Wildlife Service.

The project area is defined as suitable habitat and within the expected range of three Survey and Manage species mollusks: *Megomphix hemphilli* (Oregon megomphix), *Prophysaon coeruleum (*Blue-grey tail-dropper), and *Prophysaon dubium* (Papillose tail-dropper). Surveys were conducted as directed in current protocols and 12 sites were located: five Oregon megomphix, six Blue-grey tail-dropper, and one site containing both species. Eleven of the sites would be incorporated within the untreated Riparian Reserves. The twelfth site, located at the end of Spur J, would be reserved, but yarding would be allowed through the site if necessary.

The project area is defined as potential low quality habitat for red tree voles because the stand is too young to be suitable. No surveys are required in the watershed under current interim guidance policy as directed in Instruction Memorandum No. 97-009 and none were conducted.

The small natural pond associated with Hydrology Feature 24 in the northwest corner may provide breeding habitat for red-legged frogs and other amphibian species, including *Rhyacotriton variegatus* salamanders. The project area may provide habitat for these species. No surveys have been conducted.

Up to five special status bat species potentially use the project area for all or part of their life cycle. However, the quality and amount of habitat in the project area is generally limited due to the absence of most types of roosting and hibernacula sites, including low quality and numbers of snags. No surveys have been conducted.

### Soils

Soils in the project area are of the Bellpine, Dupee, and Atring series. Bellpine is a well drained, moderately deep, silty clay loam of high productivity. Dupee is a moderately well to somewhat poorly drained, deep, silty loam to silty clay. Atring is a moderately deep, well-drained, loamy-skeletal soil.

One area of Dupee soils is located on the west side of the northern Riparian Reserve for Douglas Creek and another on both sides of Douglas Creek in the southern Riparian Reserve. Atring soils are located on the east side of the northern Riparian Reserve for Douglas Creek and extend along the lower reaches of Streams 14 and 17. Bellpine soils are located throughout the rest of the project area.

The westside of the project area is located on gentle to moderate topography. Slopes range from 0 to 40%. The eastside of the project area is located on gentle to moderately steep topography. Slopes range form 0 to 60% with most of the area between 30 and 60%. The elevation for the proposed harvest area ranges from approximately 780 to 1,100 feet.

Timber Productivity Capability Class (TPCC) areas classified as fragile nonsuitable lands due to soil moisture deficiencies (FSNW) are located within the untreated Riparian Reserve for Douglas Creek in the northern portion of the project.

### Aquatic and Riparian Resources and Fisheries

All of the streams within the project area drain to Douglas Creek, which drains directly to the Siuslaw River. There are 24 streams, and a number of springs, seep, and wetlands located within the project area or immediate vicinity. Two streams (11 and 15) and two wetlands (7 and 27) are located on private land adjacent to the project area. A wetland associated with Hydrology Feature 24 within the project area has a very small natural pond and a short section of scoured channel associated with it.

On existing, abandoned Road No. 20-5-21.1, which parallels Douglas Creek, four stream crossings (2, 5, 7, and 13) associated with log culverts are failing. Stream flow at these crossings is restricted, and fish passage is being hindered at two locations. Sideslopes from the road are contributing to sedimentation into Douglas Creek.

Douglas Creek is a 7$^{th}$ field watershed located in the Upper Siuslaw River basin. It is in the Oregon Coast (OC) coho salmon (*O. kisutch*) and steelhead trout (*O. mykiss*) Evolutionary Significant Unit (ESU). It is also prime habitat for other anadromous and non-anadromous species. During project survey in the mainstem of Douglas Creek, low numbers of coho salmon (*O. kisutch*), moderate numbers sculpin (*Cottidae* sp.), and a small population of lamprey (*Lampetra* sp.) were detected. Coho were also observed in the lower portions of Streams 5, 14, and 17. A moderate size population of cutthroat trout (*O. clarki*) were observed in the lower portion of Stream 17 and in the entire length of Stream 14. Numerous crayfish and unidentified salamanders were also observed throughout all reaches. Other streams in the project area are non-fish bearing due to low flow, lack of habitat, or steep topography.

### Visual Resources

Because the project area is classified as Visual Resource Management Class IV, which allows major modifications of existing character of landscapes, no specific timber management constraints apply (RMP p.75).

### Cultural Resources

A survey of the project area found no cultural resources.

### Air Resources

Air resources that would be affected by the alternatives are discussed in the RMP EIS (Chapter 3, pp. 14-20).

# V. ENVIRONMENTAL CONSEQUENCES

The Proposed Action and alternatives would have environmental effects. However, none of the alternatives would have effects beyond those described in the RMP EIS and the NSO FEIS. Impacts based upon site specific analysis of the alternatives are shown below.

## A. UNAFFECTED RESOURCES

The following resources are either not present or would not be affected by any of the Alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, flood plains, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, minority populations and low income populations.

## B. DIRECT AND INDIRECT EFFECTS OF THE PROPOSED ACTION

### Vegetation and Botany Resources

Proposed Action: The Proposed Action would result in an increase in individual tree diameter growth by creating greater growing space for the retained trees in the harvested areas (Chan et al., 1996; Barret, 1994; Newton and Cloe, 1987). This would speed the development of large trees, and in time, provide a source of large snags and coarse woody debris (Curtis and Carey, 1996; Carey, 1995; Carey and johnson, 1995; McComb et al., 1993) In the moderately thinned area, stand vigor would be improved, diameter growth promoted, and stand volume increased. Canopy closure would be approximately 60% after treatment. The effects of this action would last approximately 20 years, at which time the portion outside the Riparian Reserves would be suitable for additional harvest.

In the heavily thinned area, stand development towards a later seral stage would be promoted by increasing growing space for reserve trees and by increasing the amount of light penetrating the canopy. Increased growing space would promote diameter growth and crown retention (i.e., increase in crown size) of the overstory. Increased light penetration would promote establishment and growth of shade tolerant seedlings which would increase canopy layering. Canopy closure would be greater than 40% after treatment.

Compared with the moderately thinned area, the heavily thinned stand would have greater diameter growth and structural characteristics such as canopy layering, larger limbs, larger crowns, and the establishment of shade tolerant conifers in the understory. Underplanting with shade-tolerant conifers such as western red cedar would promote the development of canopy layering.

The thinning in both the uplands and riparian would allow more light, drying winds, and ground disturbance in the stand. This would change the microclimate factors which support forest floor native herbs and would increase the likelihood of non-native and potentially noxious species entering the stand. Increased competition for remaining native herbaceous species is usually caused by the growth of shrub-layer species to more light.

Road construction is known to innoculate forest lands with noxious weeds such a Scotch broom, a noted problem in the adjacent clearcut east of the project area. Ground disturbance from road construction and ground based yarding usually temporarily sets back native herbaceous communities, impacts underground fungal resources negatively, and promotes the spread of weedy non-native plants.

One site of *Sarcosoma mexicana* would be protected with a 120 foot diameter reserve, consistent with district interim management guidelines. These guidelines were developed utilizing information from Appendix J2 of the FSEIS and local expertise. The protected area would be a no-entry, no-yard area in which protection of the duff layer would be the main objective. This reserve would adequately protect the duff layers of the known site. The other site is located within an untreated Riparian Reserve and would not be affected by the Proposed Action.

Little is known about the ecology and life cycle of *Sarcosoma mexicana*, a species of winter-fruiting fungus. At the writing of the Northwest Forest Plan, *S. mexicana* was thought to occur in deep conifer litter layers in older forests. However, from its occurrence in disturbed, compacted soils and second-growth forests, it can be deduced that *S. mexicana* can either survive or re-establish into the kind of environment caused by timber harvest, road construction, burning, and (in one known case) plowing. Therefore, it is unlikely that exposing some percentage of potential habitat to management actions as described under the Proposed Action would compromise the viability of the species. Additionally, based on the analysis presented in the Schedule Change EA, it is likely that this species would continue to persist in the stand after harvest.

Effects on *Ulota megalospora* would be minimal. Both known sites within the project area are located within untreated Riparian Reserves. Trees hosting *Ulota* would not be available for felling for stream channel enhancement, coarse woody debris, or for snag creation.

### Wildlife (including Special Status and Special Attention Species)

Proposed Action: Neotropical bird and small mammal species that require more closed canopy conditions would be displaced until conditions returned to adequate levels. Many species would ultimately benefit from the acceleration of development of late-successional stand characteristics as a result of these treatments.

Harvest would decrease the hiding and thermal cover for elk roughly 10 and 20 years respectively. Increased forage would be available the year after harvest .

Snags and down woody debris will be retained to the extent possible; however, some structures may be mechanically disturbed and degraded or functionally destroyed as a result of harvest. Mechanical damage to limbs and bark of some snags or leave trees due to harvest may create nest or roost structures for some bird and mammal species.

Nesting habitat for marbled murrelets would not be affected. Noise disturbance to nesting is unlikely because the adjacent habitat was surveyed to protocol and no murrelets were detected. The habitat is considered unoccupied.

Habitat for the northern spotted owl would be degraded and function as low quality dispersal habitat until canopy closure return to acceptable amounts in approximately 10 years for moderately thinned areas and 25 - 40 years for heavy thinned areas. Roosting and foraging potential would be eliminated for a similar number of years. Acceleration of development of late-successional stand characteristics as a result of treatments would ultimately benefit this species. Unharvested acres may continue to function as dispersal and low quality roosting and foraging habitat.

Eleven of the twelve mollusk sites would be incorporated within Riparian Reserves. The twelfth site, located at the end of Spur J, would be reserved, but yarding would be allowed through it if necessary. Overall habitat conditions for mollusks may be degraded in both treatment areas until conditions return to acceptable levels based on disturbance to down woody debris, moisture regimes, canopy closure, and temperature. Suitable habitat would remain in unharvested areas and protected known site locations, allowing for survival of many resident individuals. In both the Coast Range and the Cascade foothills of the Eugene District, it has

been observed that reducing the number of conifers ultimately favors bigleaf maples and the associated mollusk fauna. Populations of these mollusks are capable of surviving disturbances such as thinning and regeneration harvests, especially if habitat components such as downed wood are left. The unharvested areas can provide a population source to recolonize the harvested areas if the population drops due to the thinning.

Potential habitat for red tree voles would be degraded in treated areas by opening the canopy. Many local affects to this species are unknown. Although red tree voles are not expected to be using the stand, the unharvested areas may act as refugia for any individuals that are in the stand. Acceleration of development of late-successional stand characteristics as a result of treatments would ultimately benefit this species.

Where possible, nest trees located before or during harvest would be reserved

Any sensitive amphibian species would be protected by Riparian Reserves.

Many affects from treatment on bats are unknown. Species could persist or be displaced in both treatments depending on their needs. Snag creation would produce short-lived snags that may benefit some species.

Thinning the Riparian Reserves to accelerate growth of trees would provide a future source of large coarse woody debris (CWD) faster than if no action took place. The Coarse Woody Debris Creation within the Treated Riparian Reserves would benefit aquatic/terrestrial species.

Snag Creation in the Riparian Reserves and in the west side of the project area would produce short-lived small diameter snags that would satisfy some species snag use requirements for approximately 10-15 years until snags fall and become coarse woody debris, while mitigating present and post-harvest deficiency in the total number of snags.

### Soils

Effects on soils have been analyzed broadly in the RMP/EIS (Chapter 4, pp. 5-21).

Road and landing construction would not cause soil erosion or compaction capable of affecting long term, overall site productivity.

Cable yarding with one-end suspension would not cause soil compaction capable of impacting site productivity.

Designating skid trails, restricting tractor yarding to dry seasons and gentler slopes (less than 35% slope), and subsoiling skid trails would keep overall productivity losses within the ROD/RMP commitment of 1 percent or less.

Mass soil movement would not be a concern within the proposed treatment area because areas with high soil moisture, shallow soils, steep stream adjacent side slopes or soil movement indicators are not within from the proposed sale boundaries.

### Aquatic and Riparian Resources and Fisheries

Density Management as part of the Proposed Action would have effects on water quality and quantity would be similar to those described generally in the RMP/EIS (Chapter 4, pp. 21-25). Any changes in water temperature, sediment inputs, and water quality caused by the road construction and yarding would be lessened by the Riparian Reserves.

No measurable increases to stream temperature are predicted as a result of the Proposed Action. Riparian Reserves of 100 to 400 feet on either side of streams would prevent effects on streamside shading, and no yarding would occur in the these reserves.

Water quality would be protected from sediment through the design features, road and landing locations, subsoiling, and by the distance to stream channels, existing topography, and vegetative cover

Increases in erosion/sedimentation would be negligible. Potential for sedimentation from yarding would be eliminated by establishment of Riparian Reserves and by not permitting yarding through these reserves, streams or wetlands. Most new road and landing construction would be outside of Riparian Reserves, except as described in the Roads and Yarding design features. Road and landing design and required subsoiling, in combination with distance from stream channels, topography, and vegetative cover would make increases in sediment unlikely.

Effects on stream flow are expected to be low. Effects from compaction on stream flow would be negligible due to design features including subsoiling. The project area is not within the transient snow zone. The density management design features would result in a reduction in evapotranspiration and interception because of the removal of some of the overstory. This could have the potential effect of increasing soil moisture levels, particularly during the fall and spring. Changes to total water yield (yearly volume of water) and absolute volume of low flows are expected to be negligible to slightly increased. Changes to the timing and magnitude of peak flows would be expected to be negligible.

Negative effects on channel and bank stability would be unlikely. Riparian Reserves would fully protect channels from yarding disturbance, and other design features for the proposed harvest would cause no effects.

No effects to fisheries resources are anticipated as a result of the proposed timber harvest. Project design features under the Proposed Action would not degrade critical habitat nor hinder life history stages of resident or anadromous fish species. There would be no new stream crossings, and most road construction would be outside of Riparian Reserves. The 100 to 400 foot untreated Riparian Reserves would safeguard the integrity of channel structure and prevent disturbance to fish and other aquatic biota. Treating the Riparian Reserves to 100 feet of the stream channels on non-fishbearing streams would potentially lead to improved large wood delivery to project area streams and riparian area, and potentially an increase in the quantity and quality of physical and biological components of the riparian and stream network.

Rehabilitation of Existing Stream Crossings: Streams 2, 5, 7, and 13 would be rehabilitated to their natural condition. Road grade would be removed, and stream channels and sideslopes restored. Waste material would be moved to a local site that would avoid or minimize the chance of filtering into the stream system.

Work would be accomplished using an excavator which would reach the impacted streams from existing compacted roads and tractor trails. Effects would be minimized by requiring the use of a low-ground-pressure tracked excavator, operating during low flow and low soil moisture conditions to minimize ground disturbance, using riparian trees cut from the Stream Channel Enhancement proposal for temporary placement in the channels to facilitate movement of equipment across partially failed channels, and breaking up compacted areas with the excavator upon completion of channel restoration.

Little or no added compaction would be anticipated. Due to the ground disturbing activities at the restoration sites, there is the potential of increased erosion/sedimentation within these streams and Douglas Creek for approximately one year, until understory vegetation is reestablished. Restored sideslopes would be replanted with shade tolerant conifers. Large wood from the Stream Channel Enhancement proposal would be placed in restored stream channels for structure.

In the long term, removing the existing fill and reestablishing the natural drainage configurations would reduce the potential for further fill failures at these stream crossings, and restore bank and channel stability. Future sedimentation to Douglas Creek would be significantly reduced, thus maintaining water quality and reducing the potential for substrate embeddedness in Douglas Creek. In addition, Streams 2, 7, and 13, which have sufficient flow and upstream habitat, would be restored for upstream migration of fish and other aquatic-

dependent species. This would potentially provide approximately 1,600 feet of additional rearing and spawning habitat for salmonids.

Stream Channel Enhancement: The falling of trees into Douglas Creek and westside tributaries would have a beneficial influence to the physical and biological characteristics of the stream. The addition of large wood into these streams may greatly increase aquatic habitat diversity by forming pools and backwater areas, widening the channel, and potentially forming short braided and secondary channel system. It would provide nutrients and a food source for detritus feeding microbes and invertebrates, cover for fish, and help retain necessary spawning gravels.

A short-term disturbance to resident fish and other aquatic-dependent species would occur as a result of falling trees directly into the channel. Tree selection criteria would be across all diameter classes while maintaining streamside shading. To protect streambank stability, trees would not be cut within 25 feet of stream channels.

Coarse Woody Debris Creation would result in no measurable increases to stream temperature. Stream side shading would not be affected.

## C. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE A

### Botany Resources

Effects would be largely similar to the Proposed Action. Additional road renovation and construction of Spur F1 would increase the risk of scotch broom infestation from the adjacent clear cut area.

Due to the minimal additional harvest acreage and road renovation and construction, effects on other resources, including **Vegetation, Wildlife, Soils, Aquatic and Riparian Resources and Fisheries**, would be similar to the Proposed Action

## D. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE B

### Vegetation and Botany Resources

Alternative B would have similar effects on the uplands as described in the Proposed Action. Because the Riparian Reserves would receive no treatment under this alternative, current trends in stand development would continue. Competition for growing space would continue to impede diameter growth and reduce live crown ratios. Ongoing suppression mortality would continue to thin the stand naturally. A persistent closed canopy would retard the growth of the understory hemlock, and red cedar regeneration and slow the development of canopy layering. The herbs, shrubs, and non-vascular plants found in the Riparian Reserves would remain undisturbed.

### Wildlife (including Special Status and Special Attention Species)

Alternative B would have similar effects on wildlife as the Proposed Action, except benefits of the Coarse Woody Debris Creation within the Treated Riparian Reserves and Snag Creation portions of the project and acceleration of late-successional characteristics in Riparian Reserves would not be realized.

### Aquatic and Riparian Resources and Fisheries

Density Management in the uplands under Alternative B would have similar effects as the Proposed Action.

Rehabilitation of Existing Stream Crossings would not occur. Short term increases in erosion/sedimentation as a result of excavator use would be prevented, but long-term sediment input to Douglas Creek would continue at the fill failures. Benefits of bank and channel stability

and opening of fish passage would not be realized.

Because Stream Channel Enhancements would not occur, overall disturbance to fish populations would be lower than the Proposed Action. Habitat complexities would not be enhanced.

Effects on other resources, including **Soils,** would be similar to the Proposed Action.

## E. DIRECT AND INDIRECT EFFECTS OF ALTERNATIVE C (no action)

### Vegetation and Botany Resources

Deferring treatment at this time would continue current trends in stand development. Stand density is currently at a point at which mortality occurs and competition for growing space results in decreased diameter growth and reduced live crown ratios. Stand vigor would decrease and potential harvest volume would be lost to competition mortality. Timber volume would not be produced.

Non-native plants and noxious weeds would not be provided the opportunity to enter the undisturbed stand.

### Wildlife (including Special Status and Special Attention Species)

Disturbance to wildlife species would not occur, nor would degradation or elimination of habitat for spotted owls. Benefits as a result of the acceleration of development of late-successional characteristics would not be realized.

### Aquatic and Riparian Resources and Fisheries

Existing conditions would continue. Benefits as a result of Rehabilitation of Existing Stream Crossings or Stream Channel Enhancements would not occur, and effects would be similar to Alternative B.

Existing conditions would continue for other resources, including **Soils**.

## F. EFFECTS ON AQUATIC CONSERVATION STRATEGY OBJECTIVES

The Proposed Action and Alternative A include management within Riparian Reserves that is needed to attain Aquatic Conservation Strategy (ACS) objectives. Site-specific conditions in this project area are consistent with the general discussion in the Siuslaw Watershed Analysis, which identified management opportunities for density management treatments in Riparian Reserves. That analysis specifically addressed density management treatments in pole-young stands -- the condition of the stands in the project area -- with the objective of speeding the development of large trees (Siuslaw Watershed Analysis, Chapter V, page 2).

Density management treatment in the upland areas under the Proposed Action and Alternatives A and B and in the Riparian Reserves under the Proposed Action and Alternative A would likely contribute to the restoration of the distribution and complexity of watershed and landscape-scale features (ACS No. 1). No management activities in the Riparian Reserves under Alternative B or in the project area under Alternative C would maintain current conditions.

All of the alternatives would maintain or restore the spacial and temporal connectivity between watersheds (ACS No. 2). There are no human caused barriers in Douglas Creek; however, stream flow and upstream fish migration have been disrupted on westside tributaries within the project area by abandoned Road No. 20-5-21.1. Under the Proposed Action and Alternative A, restoration of westside tributaries would restore their connectivity to the mainstem Douglas Creek.

Under the Proposed Action and Alternatives A and B, there would be no new stream crossings,

and most road construction would be outside of Riparian Reserves. This would maintain the spatial and temporal connectivity within and between watersheds. Project area streams would be well protected from timber harvesting and road construction by the 100 to 400 foot Riparian Reserves, thereby maintaining chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

All the alternatives would also maintain or restore the physical integrity of the aquatic system (ACS No. 3). Under the Proposed Action and Alternative A, geomorphic characteristics of Douglas Creek and associated tributaries would be maintained with the establishment of Riparian Reserves boundaries. Yarding is not proposed across any of the hydrologic features under any of the alternatives. No new stream crossings or physical barriers to movement are proposed.

Under the Proposed Action and Alternative A westside-tributary sideslopes, streambanks, and channel bottom configuration would be restored to their original condition via the Stream Restoration proposal. The Stream Channel Enhancement proposal would help reduce stream velocity, stabilize shorelines and streambanks, and maintain necessary spawning gravels within the system.

All alternatives would maintain or restore water quality (ACS No. 4) necessary to support healthy riparian, aquatic, and wetland ecosystems. The Proposed Action or Alternative A would not alter any streamside vegetation that would be expected to influence stream temperature. Very minimal cutting along Douglas Creek and the westside tributaries to provide large woody debris to the channels and riparian areas would be done under these two alternatives. Under the Proposed Action and Alternative A, Riparian Reserve density management treatment is not expected to measurably change the thermal regime at the site. In the long-term, residual trees within Riparian Reserves would provide increased shading to project area streams.

No effects on stream temperature would occur under Alternatives B and C, as there would be no cutting within the Riparian Reserves of any streams. Similarly, no effects on other water quality parameters, such as pH, conductivity, dissolved oxygen, and nutrients, are likely under any of the alternatives.

All of the alternatives would maintain or restore the sediment regime (ACS No. 5) under which the aquatic ecosystems evolved. Negligible changes to sediment regime would be anticipated with the proposed design features. Minor increases in short term sedimentation above existing conditions could occur during the restoration of Streams 2, 5, 7, and 13 under the Proposed Action or Alternative A. Long-term sedimentation in these channels is expected to decrease below existing conditions under these two alternatives. The addition of large woody debris to Douglas Creek under the Stream Channel Enhancement proposal would be expected to help regulate the sediment regime by dissipating energy of flowing water and managing the sorting and storage of sediments.

The restoration of these channels would not occur under Alternatives B and C, and no short term changes in sedimentation would occur above existing conditions. Current sediment input from the failing crossings would continue over the long term.

All alternatives would maintain or restore in-stream flows (ACS No. 6) sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows would be protected under all alternatives.

All alternatives would also maintain or restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands (ACS No. 7). The factors usually associated with changes to flow would range from not being affected at all to minimally affected under all the alternatives. The project area is very unlikely to experience rain-on-snow events

because of the low elevations. The stream network would not be extended by the road network because of the road design features (temporary use, outsloped drainage, subsoiling). Minimal new compaction is likely to occur. Minor increases to summer low flow and total annual water yield are possible under the Proposed Action and Alternatives A and B due to some changes in total evapotranspiration. An increase in summer stream flows is potentially beneficial to some aquatic organisms.

The Stream Channel Enhancement proposal would be expected to increase channel deposition and raise the streambed levels. One of the principle purposes would be to raise the groundwater effective level, thus raising the storage capacity of the system. In addition, this would promote increased floodplain inundation at peak flows, thereby creating critical off-channel rearing habitat for fish and aquatic-dependent species.

The Proposed Action would maintain or restore the species composition and structural diversity of plant communities, (ACS No. 8) The Proposed Action and Alternatives would not alter any streamside vegetation that would be expected to influence stream temperature. Over the long-term, as this mid-successional stand develops into a late-successional condition, the current thermal regime may begin to approximate a historical , cooler thermal regime. However, this is dependent upon private activities within the watershed. Riparian Reserve widths under the Proposed Action and Alternatives are expected to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion and bank erosion; channel migration is expected to be increased due to the Stream Channel Enhancement proposal. Large woody debris recruitment is expected to be maintained in the short-term and restored through recovery over the long-term.

The Proposed Action and Alternatives would maintain or restore habitat to support well-distributed population of some riparian-dependent species (ACS No. 9) by speeding the development of late-successional forest characteristics within the Riparian Reserves. The Proposed Action would cause a reduction in canopy closure for several decades in the thinned areas, which could result in some micro-climatic alteration or other adverse effects for species that prefer complete canopy closure or that do not tolerate disturbance. Any such effect would be minor because of the effect of the residual trees, the extensive untreated reserve areas, and because of the current poor habitat condition of the stands for most species associated with late-successional forests.

Based on the above analysis of the effect on attainment of the ACS objectives, the Proposed Action and Alternatives are consistent with the ACS and the objectives for the Riparian Reserves. The Proposed Action and Alternative A would contribute to the process of riparian recovery in the Upper Siuslaw Watershed.

## G. CUMULATIVE EFFECTS

This analysis incorporates the analysis of cumulative effects in the USDA Forest Service and USDI Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, February 1994, (Chapter 3 &4) and in the Eugene District Proposed RMP/EIS November, 1994 (Chapter 4). These documents analyze most cumulative effects of timber harvest and other related management activities. None of the alternatives in this proposed action would have cumulative effects on resources beyond those effects analyzed in the above documents. The following section supplements those analyzes, providing site specific information and analysis particular to the alternatives considered here.

The Siuslaw Watershed is located in Lane and Douglas Counties, southwest of the city of Eugene, and contains the town of Lorane. The watershed lies at the southeast headwaters of the Siuslaw River Basin, which also includes the Lake Creek and Wolf Creek watersheds for

which watershed analyses have been completed. The Umpqua River Basin lies immediately to the south of the watershed, and the Willamette River Basin lies immediately to the east and northeast of the watershed. The Siuslaw Watershed covers 104,683 acres; of this, slightly more than 43,000 acres are public land managed by BLM.

Most of the Siuslaw Watershed is forest Industry or BLM administered land, with a small amount of private nonindustrial land ownership, and very minor amounts of State and County land ownership. Land use in the watershed is primarily forest management in the western two-thirds of the watershed and a mixture of forest management and agriculture in the eastern third, with agricultural use especially concentrated in the Lorane Valley.

It is unlikely that stands on BLM-administered lands in the Siuslaw Watershed will be treated with regeneration harvests because of the predominance of Late Successional Reserves in the watershed. Others stands on BLM-administered lands in the watershed would be treated with thinning harvests. BLM has sold one recent timber sale in the Siuslaw Watershed, "Tyrrell Density Management," FY98, which is located in Section 9 southwest of the proposed project area. One other sale, "Fawn Creek Density Management," FY 99, has been proposed in the Siuslaw Watershed.

Private forest lands within the watershed will most likely continue to be subject to intensive forest management, including clear cutting and burning. Also, it is possible that some forest stands on private land will be converted to nonforest land.

The Siuslaw Watershed Analysis analyzed the road network for its potential to impact aquatic resources. Over 91% of the roads in the Siuslaw Watershed do not deliver sediment or flow to stream channels. All high traffic routes are paved. Almost 80% of the 9% that have access to channels are rocked sufficiently to reduce sediment yielding potential by approximately 80%. The calculated increase of sediment over natural background due to roads is approximately 1 to 2%. This is extremely small relative to natural fluctuations and is unlikely to impact the health of aquatic resources. All new construction would be subsoiled upon completion of harvest and would not alter the road sediment or flow effects previously analyzed.

In the short term (approximately 10-40 years), the Proposed Action, together with current harvesting and other disturbances, would contribute to the degradation or elimination of habitat for species preferring heavy canopy cover stands. Species that cannot tolerate disturbance would be affected. Beyond 40 years, the Proposed Action and other density management treatments on BLM-administered lands, and protection of other BLM-administered lands, could have a cumulative effect of increasing mature and late-successional habitats of both the uplands and treated Riparian Reserves.

Protocol surveys within the Coast Range Province in 1997 and 1998 resulted in the discovery of 122 *Megomphix hemphilli*, 60 *Prophysaon coeruleum*, and 12 *Prophysaon dubiium* sites. All three species appear to be well distributed across the province. In both the Coast Range and the Cascade foothills of the Eugene District, it has been observed that reducing the number of conifers ultimately favors bigleaf maples and the associated mollusk fauna. Populations of these mollusks appear capable of surviving and recolonizing some disturbances such as thinning harvest. The Proposed Action and other harvest activities in the area are not expected to pose a risk to local viability or distribution of the three mollusk species.

The timber harvest proposed under the Proposed Action would have a cumulative effect of setting back the natural successional patterns in the lower canopy and herbaceous layer. This increases the tendency for non-native species to monopolize habitats once occupied by more complex communities of co-adapted natives.

Cumulative impacts on known sites of Survey and Manage and Protection Buffer botanical species would also be minimal. The known populations would be given long term protection

because of the reserves established around each site. There is a slight risk that by conducting harvest in areas for which surveys have not been completed, some loss of individuals could occur. However, there is substantial habitat provided by Riparian Reserves, Late Successional Reserves, and other reserves in the watershed. It is unlikely that exposing some percentage of potential habitat to management actions as described in the action alternatives would compromise the viability of the species known to occur in the project area.

The Proposed Action, together with other harvesting and road-construction, could cause a minor increase in water flows and overall water yield. Because of the density of trees retained on the landscape and the protection of Riparian Reserves, a cumulative effect of increased water flow and yield is unlikely. In addition, the Proposed Action's direct or indirect effects on water resources would be minor and short-lived, limiting the potential for cumulative effects with other actions. The density management treatment would maintain future silvicultural management options in the stands, consistent with the objectives in the standards and guidelines for the Matrix land use allocation (RMP EIS, Chapter 2, pp.62-63)

The cumulative effects of Alternative A would be similar to the Proposed Action, except the added road renovation and road construction of Spur F1 would increase the likelihood of non-native species such as scotch broom occupying the habitats of native species on a long-term or permanent basis.

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Alternative B would have similar cumulative effects as the Proposed Action for the uplands. Without any treatment within the Riparian Reserve, late-successional characteristics would be produced at a slower rate than the uplands.

Alternative B, together with other harvesting and road-construction, could cause a minor increase in water flows and overall water yield. Because of the density of trees retained on the landscape and the protection of Riparian Reserves, a cumulative effect of increased water flow and yield is unlikely.

Alternative B could cause a short-term increase in sediment inputs. Because of the density of trees retained on the landscape, the protection of Riparian Reserves, and the planned mitigation measures, a cumulative effect together with other harvesting and road construction would be less than the Proposed Action or Alternative A.

Alternatives B and C would result in a long term risk of erosion/sedimentation at the fill failures, which would be higher than the Proposed Action and Alternative A. Bank stability in the area of the stream crossings would remain unstable as compared to the Proposed Action and Alternative A.

Alternative C (no action) Deferring treatment at this time would continue current trends in stand development. As the stand ages the ability to respond to release is lost. Stand density is approaching the point at which overtopped or suppressed trees are beginning to die. As these trees die, the ability to recover any monetary value of the dead or dying timber is lost. Competition within the stand will slow the diameter growth of the entire stand. Maintaining a closed canopy condition will decrease crown retention and canopy.

## H. MITIGATION MEASURES

The Proposed Action may result in the incidental take of the northern spotted owl. The U.S. Fish and Wildlife Service has issued incidental take provided that the BLM: 1) prohibit timber harvest activities within a quarter mile (or greater if deemed necessary by an agency biologist) of any know owl activity center between March 1 and June 30 (or later if deemed necessary by an agency biologist), unless surveys indicate nesting has not occurred, and; 2) Report on the progress and completion of the project to the U.S. Fish and Wildlife Service.

The Proposed Action may result in the incidental take of the Oregon Coast coho salmon. The

National Marine Fisheries Services (NMFS) has authorized incidental take, and has added no reasonable and prudent measures beyond those already incorporated into the design features described under the Proposed Action.

Surveys for the 32 species listed in the Schedule Change EA will begin if technical feasibility problems can be solved. If it is determined by species experts that survey feasibility issues have been resolved throughout the suspected range of any of the 32 species, and if a letter of direction is received prior to issuance of a Decision Record, surveys and appropriate management actions would be implemented.

# VI. CONSULTATION AND COORDINATION

## A. LIST OF PREPARERS

The Proposed Action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists:

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|---|---|
| Jeff Apel | Engineering |
| Mike Blow | Wildlife and Threatened and Endangered species |
| Rick Colvin | Landscape Planner |
| Al Corbin | Timber Management |
| Phil Dills | Fire |
| Richard Hardt | Ecology |
| Pete O'Toole | Silviculture |
| Kim Reviea | Timber |
| Mike Southard | Cultural Resources |
| Steve Steiner | Hydrology |
| Chuck Vostal | Fisheries |
| Molly Widmer | Botany |
| Barry Williams | Soils |

## B. CONSULTATION

Pursuant to the Endangered Species Act, formal consultation was completed with the Fish and Wildlife Service on this proposed action, along with other actions proposed in the Eugene District for Fiscal Year 1999. The Fish and Wildlife Service issued its Biological Opinion on October 23, 1998, completing consultation.

Pursuant to the Endangered Species Act, consultation was conducted with the National Marine Fisheries Service to evaluate the effects of the Proposed Action on coho salmon (*O. kisutch*) by applying the standards of Section 7(a) (2). NMFS issued its Biological Opinion on July 23, 1999, completing consultation.

The Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians were notified of the project during a consultation process for a number of potential timber harvests in their ancestral area, requesting information regarding tribal issues or concerns relative to the project. They responded by letter dated September 29, 1997 in which they raised a concern about "…the state of dwindling resources of a cultural nature…" Follow-up conversations with their cultural coordinator revealed that they had no specific information regarding use areas within the proposed project area, nor did they have specific concerns regarding the Proposed Action.

## C. PUBLIC PARTICIPATION

A public notice advertising the availability of this EA and preliminary FONSI appeared in the Eugene Register-Guard on March 24, 1999. Additionally, the environmental assessment was sent to the following list of groups, agencies and individuals:

Ann Mathews, Eugene, OR
Carol Logan, Kalapooya Sacred Circle Alliance, Springfield, OR
Charles and Reida Kimmel, Eugene, OR
Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, Coos Bay, OR
Craig Tupper, Eugene, OR
David Simone, Eugene, OR
Governor's Forest Planning Team, Salem, OR
Harold Schroeder, Eugene, OR
Jan Wroncy, Eugene, OR
John Bianco, Creswell, OR
John Poynter, Lorane, OR
Lane County Land Management, Eugene, OR
Neal Miller, Eugene, OR
Oregon Dept. of Land Conservation and Development, Salem, OR
Oregon Dept. of Forestry, Veneta, OR
Oregon Dept. of Fish and Wildlife, Springfield, OR
Oregon Dept. of Environmental Quality, Portland, OR
Oregon Natural Resources Council, Eugene, OR
Pacific Rivers Council, Eugene, OR
Pam Hewitt, Marcola, OR
Peter Saraceno, Eugene, OR
Roseburg Forest Products, Roseburg, OR
Sierra Club - Many Rivers Group, Eugene, OR
Swanson-Superior Forest Products, Inc., Noti, OR
Western Environmental Law Center, Eugene, OR

A 30-day public comment period for the EA closed on April 23, 1999. Letters were received from:

Nicole Czarnomski, Oregon Natural Resources Council, Eugene, OR
Peter Saraceno, Eugene, OR.

The paragraphs below summarize the public comments and the response to the comments. Comments addressed five major categories: (1) Lack of Surveys; (2) Roads, Sediment, Peak Flows, and Best Management Practices; (3) Riparian Reserves and Connectivity; (4) Adequacy of the Analysis; and (5) Specific Species Comments.

**Lack of Surveys**

**Comment:** Both commenters were concerned about the lack of surveys for red tree voles and the 32 survey and manage and Protection Buffer species described in the Schedule Change EA. Both suggested that surveys be completed before the project is implemented. ONRC expressed the opinion that the RMP amendment and red tree vole interim survey protocol are violations of NEPA and not in compliance with the Northwest Forest Plan. ONRC suggested that surveys for bats and salamanders be conducted prior to implementation. Mr. Saraceno indicated that surveys for birds covered under the Migratory Bird Treaty Act should be conducted and expressed concern about impacts to the bird species protected by this Act.

**Response:** As stated in the EA (page 2), the Proposed Action and alternatives are consistent with current BLM policy in regards to S&M surveys and red tree vole surveys. The EA also notes (page 19) that surveys will be completed for those species for which technical feasibility problems can be solved prior to issuance of a decision. Whether or not the RMP amendment is in violation of NEPA is beyond the scope of this EA.

Regarding surveys for bats, the NSO ROD standard and guideline states, “Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats…” (NSO ROD, page C-43). The reference to “crevices and voids large enough to fit a human”

stems from the actual definition of a "cave" as used in the Federal Cave Resources Protection Act of 1988. During field reconnaisance of the proposed project area, no crevices or voids were found; therefore no specific surveys for bats were necessary. Bats do use snags, and snags which do not pose a safety hazard would be retained (EA page 3).

Surveys for salamanders are not required unless a species is listed as Threatened or Endangered, is a Survey and Manage Component 2 species, or is a Protection Buffer species. No known threatened, endangered, Survey and Manage Component 2, or Protection Buffer salamander species are known or suspected to occur in the Eugene BLM District (RMP ROD, pgs 48 and 65).

The Migratory Bird Treaty Act does not require surveys for birds protected under the Act. Impacts to migratory birds as a result of the Proposed Action or alternatives do not differ from those described in the RMP.

**Roads, Sediment, Peak Flows, and Best Management Practices**

**Comment:** ONRC expressed concern about the amount of new road construction proposed and that new construction would increase sedimentation, peak flows, and compaction. Mr. Saraceno also expressed concern that roads in riparian areas and those left between logging seasons would increase sedimentation. He also asked about current road densities and why there were no road closures and obliterations associated with the Proposed Action.

**Response:** Impacts from roads and road construction are described on pages 11-13 and pages15-17. Increases in sedimentation would be negligible, and compaction would not be at levels capable of affecting site productivity. Changes to the timing and magnitude of peak flows is expected to be negligible. This includes the roads that would be constructed in the outer portions of Riparian Reserves. The Upper Siuslaw Watershed Analysis states that road density throughout the watershed is 4.8 miles of road per square mile. Regarding potential road closures, the EA states on page 4 that roads would be blocked and waterbarred between logging seasons; and, that upon completion of operations, newly constructed and renovated roads would be blocked and subsoiled. During the interdisciplinary analysis of this project, the team considered reclamation of Road No. 20-5-21.1, but did not include it as part of an alternative because it was already becoming overgrown with trees and shrubs. This has been clarified in the EA (see page 5).

**Riparian Reserves and Connectivity**

**Comment:** Commenters were concerned about the functionality of habitat connectivity, Connectivity Blocks, and Riparian Reserves. Concerns were raised that harvesting may further fragment the area and reduce connectivity, especially in the proposed heavy thinning area. ONRC suggested that activities in Riparian Reserves be avoided unless needed to attain Aquatic Conservation Strategy objectives. Mr. Saraceno questioned the relationship between the proposed thinning and the Connectivity/Diversity Block 150-year area control rotation Standard and Guideline.

**Response:** The stated purpose of activities within the Riparian Reserves is to acquire desired vegetation characteristics needed to attain ACS objectives (see page 1 and pages 15-17). The ACS analysis concludes that the actions proposed would contribute to the process of riparian recovery in the Upper Siuslaw Watershed. This has been clarified in the EA.

Impacts to connectivity are discussed under the ACS analysis, pages 15-17. Impacts to connectivity are expected to be very minor due to the influence of the residual stand, the untreated portion of the Riparian Reserves, and the temporary nature of the majority of the road construction.

The 150-year ***area control*** rotation applies only to regeneration harvests, not to thinnings. If left alone, the stand would eventually function as late-successional forest, but it would reach that point many decades later than under the Proposed Action. A thinning, as described in the Proposed Action, would result in an increase in individual tree diameter growth, which would lead to quicker

development of those structural characteristics typical of late-successional forests. The EA has been clarified to describe these anticipated results more explicitly (see page 9).

**Adequacy of the Analysis**

**Comment:** ONRC raised questions regarding the adequacy of the cumulative effects analysis and the range of alternatives. They suggested that an EIS be done.

**Response:** The NSO FSEIS and the RMP EIS considered the cumulative effects of timber harvest. Those analyses are incorporated into this EA by reference (see page 17). Both of these referenced analyses took into account activities on non-federal land. The cumulative effects analysis in the EA supplements those analyses with site-specific information. Reasonably foreseeable future actions were identified. In consideration of past, present, and future actions, no cumulative effects beyond those already described in the two EISs were identified.

NEPA requires that a reasonable range of alternatives be considered. The Proposed Action contains commercial timber harvests in uplands and in portions of Riparian Reserves, and restoration activities. Alternative A contains slightly more commercial timber harvest, and Alternative B contains only timber harvests. During the interdisciplinary discussions of this proposal, no other alternatives were revealed that addressed the stated purpose of the action. A restoration alternative was not considered because it would not meet the purpose of the action as described on page 1. The EA has been clarified on this point (see page 5).

An EIS is not necessary because none of the impacts described in the EA are beyond those already described in the NSO FSEIS and the RMP EIS. The EA has been clarified regarding this point (see page 9). See also page17 (Cumulative Effects).

**Specific Species Comments**

**Comment:** Both commenters had questions or concernsregarding impacts to specific species, or expressed concerns about impacts to specific species. ONRC raised concerns about impacts from harvesting on northern spotted owls, marbled murrelets, three Survey and Manage mollusk species, and coho salmon. Mr. Saraceno expressed the opinion that heavy thinning should not occur in an owl critical habitat unit, and was concerned that timber harvest would result in increased water temperature and cause other degradation of coho habitat downstream of the project area.

**Response:** Impacts to northern spotted owls and owl habitat are described on page 11. The EA recognizes that the Proposed Action may result in incidental take of northern spotted owls. The US Fish and Wildlife Service has issued reasonable and prudent measures to minimize the likelihood of incidental take, including a restriction on activities that could disturb nesting owls. Under the Northwest Forest Plan, not every acre was intended to provide for all the life needs of northern spotted owls. The proposed project area contains dispersal habitat with low quality foraging and roosting habitat. The project area lies within Critical Habitat Unit OR-53. According to the Upper Siuslaw Watershed Analysis, CHU OR-53 contains 50,593 acres of federal land, of which 21,385 acres (42%) are suitable (roosting, nesting, and foraging) habitat. This information has been added to the EA for clarification (see page 7).

As stated in the EA (page 7), the proposed project area is not suitable marbled murrelet nesting habitat. Suitable habitat does exist within ¼-mile of the project area, but based on surveys it is considered to be unoccupied. Acceleration of late-successional stand characteristics would benefit this species.

Impacts to known sites of survey and manage mollusks are described on pages 10 and 18. The analysis concludes that all known sites would be adequately protected and population viability would be maintained.

As stated in the EA (page 12), the Proposed Action would not degrade critical habitat for anadromous fish species. No measurable increases to stream temperature are predicted, primarily because there would be no change to the level of streamside shading (EA page 12).

## VII. REFERENCES

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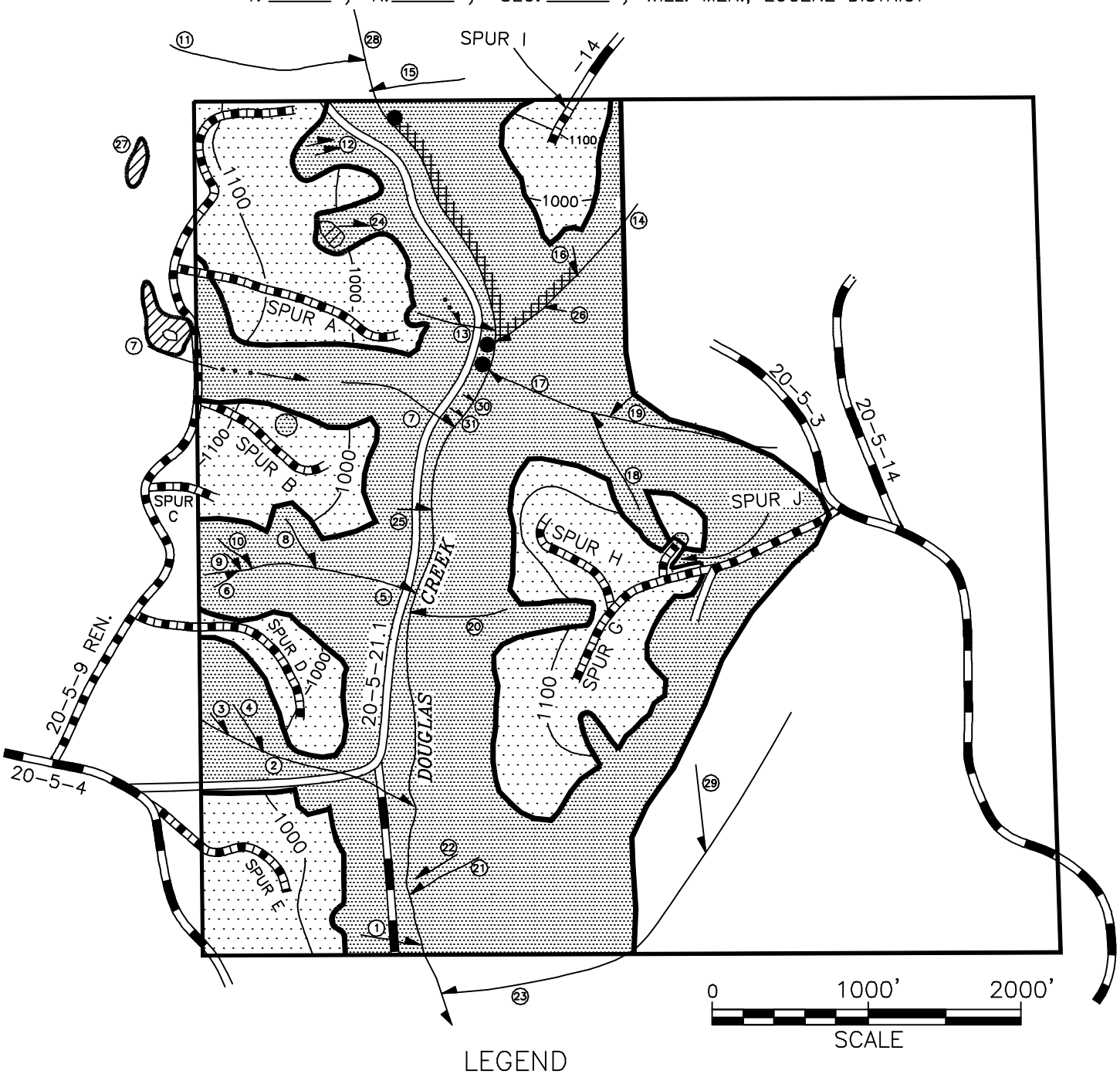
# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## BUREAU OF LAND MANAGEMENT

PROPOSED ACTION

DOUGLAS CREEK E.A. MAP

T. 20S. , R. 5W. , SEC. 3 , WILL. MER., EUGENE DISTRICT




## LEGEND

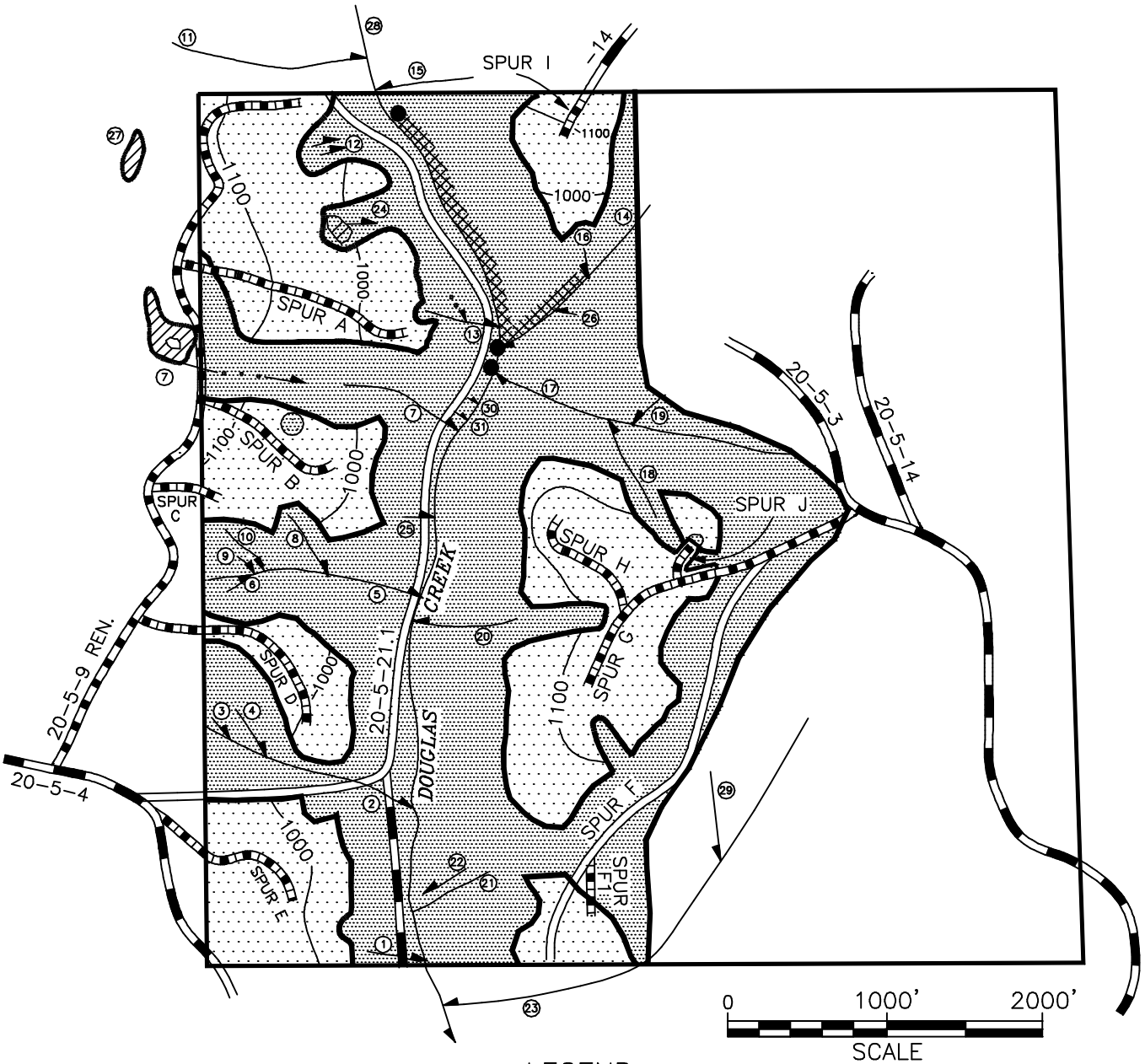
- DENSITY MANAGEMENT HARVEST AREA
- RESERVE AREA
- WET AREA
- HANGING MEADOWS
- TPCC
- ROCK SURFACED ROAD
- EXISTING DIRT ROAD
- ROAD TO BE CONSTRUCTED
- ROAD TO BE RENOVATED
- (11) HYDROLOGY FEATURE
- STREAM
- INTERMITTENT STREAM

DATE: 3-16-99

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## BUREAU OF LAND MANAGEMENT
DOUGLAS CREEK E.A. MAP

ALTERNATIVE A

T. 20S. , R. 5W. , SEC. 3 , WILL. MER., EUGENE DISTRICT




## LEGEND

SCALE: 1" = 1,000 FT.

- DENSITY MANAGEMENT HARVEST AREA
- RESERVE AREA
- WET AREA
- HANGING MEADOWS
- TPCC
- ROCK SURFACED ROAD
- EXISTING DIRT ROAD
- ROAD TO BE CONSTRUCTED
- ROAD TO BE RENOVATED
- (11) HYDROLOGY FEATURE
- STREAM
- INTERMITTENT STREAM

DATE: 3-15-99

# ENVIRONMENTAL ASSESSMENT NO. OR090-98-24

Douglas Creek
Timber Sale Tract No. E-99-375

Debra Wilson
July 1999

United States
Department of the Interior
Bureau of Land Management
Eugene District Office
South Valley Resource Area